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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/707,082

11/20/2003

Cheng-Sheng Lee

11690-US-PA

1081

31561

7590

07/31/2006

EXAMINER

PHAM, LY D

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



**FINAL ACTION**

**DETAILED ACTION**

1. Applicant's Amendment filed June 08, 2006 has been entered. Claims 1, 5, 7, 12, and 13 have been amended. New claim 14 has been added.
2. Claims 1 – 14 are pending.

***Drawings***

3. The drawings were received on June 08, 2006. These drawings are acceptable.

***Claim Objections***

4. Claims 1 – 4 and 7 – 14 are objected to because of the following informalities:

In **claim 7**, line 4, "... outputting a row turn-off signal ..." is believed to be a typographical error, which was supposed to be "column" since it is a signal from a column selection line (see claim 1 for comparison). For the purpose of examination, it is assumed to be a "column" turn-off signal.

In **claims 1 and 7**, the first circuit block and the second circuit block are claimed to be "capable of" outputting a column/row turn off signals. It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

For the purpose of examination, see paragraph 13 below for claim language best understood and acceptable by the Examiner.

Appropriate corrections are required.

### ***Response to Arguments***

5. Applicant's arguments filed June 08, 2006 have been fully considered but they are not persuasive. The rejection below is based on grounds, which apply to the claims as amended.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 – 4 and 7 – 14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

In **claim 1**, lines 10 – 16, “a switch device coupled to the memory cell, ..., the switch device is turned off so as to disconnect a coupling between the power supply terminal and **the defect memory cell**, ...”.

The switch device cannot disconnect the coupling between the defect memory cell from the power supply terminal if the switch device is not claimed to be coupled to the defect memory cell, but the memory cell.

Similarly in **claim 7**, lines 9 – 15, the “device for breaking a leakage current path” is disclosed to comprise a switch device coupled to the memory cell, a power supply terminal, etc..., but when the column turn-off signal and the row turn-off signal are asserted, the switch device is turned off and disconnect the coupling between the power supply terminal and the **defect** memory cell.

As side notes, in claim 1, was “the defect memory cell” intended by “a memory cell” (line 4) and “the memory cell” (lines 7 and 10)? Similarly for claim 7, was “the defect memory cell” intended by “a memory cell” (line 3) and “the memory cell” (lines 6 and 10)?

Appropriate corrections are required in order to overcome this type of rejection. For the purpose of examination, language best understood by the Office is included in paragraph 13 below.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Kiriata et al. (US Pat 5,619,460).

Regarding **claim 5**, Kiriata et al. disclose a method for breaking a leakage current path existing in a defect memory cell for a circuit having a memory array, the method comprising:

selecting a column selection line in response to a memory cell within a memory array (for example in fig. 1, a memory cell to be accessed is the ACCESS BIT, the bit line BL is the column selection line);

selecting a row selection line in response to the memory cell within the memory array (the corresponding word line 112, WL);

coupling a column turn-off signal to the column selection line and a row turn-off signal to the row selection line when the memory cell is detected to be the defective memory cell (col. 1, lines 37 – 41, "... simultaneously disabling selection of the row/column with the defective cell") and so that a power provided from a power supply terminal is not coupled to the memory cell (inherent from the row/column selection disabling step).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiriata et al. in view of Arimoto et al. (US Pat Pub 2003/0103368).

Regarding **claim 6**, Kiriata et al. disclose the method for breaking the leakage current path of claim 5, except wherein the column turn-off signal and the row turn-off signal are controlled by a stand-by signal. However, this feature has been taught by Arimoto et al. (paragraph 0615 teaches detecting and measuring standby leakage current, which results from leakage defective memory cell in stand by, paragraph 0611, wherein the link to where there is a short is blown—decoupling of the lines to the defective cell).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the feature taught by Arimoto et al., to the teaching by Kiriata et al., so that defective cell detected during standby is replaced (paragraph 0059).

### ***Allowable Subject Matter***

12. **Claims 1 – 4 and 7 – 14** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter as best understood by the Examiner:

The prior arts of record fail to teach or reasonably suggest a device for breaking a leakage current path existing in a defect memory cell in a memory array within a memory device, comprising in combination:

a column selection line coupled to a first circuit block and adapted to select a column of a memory cell within a memory array, wherein the first circuit block outputs a column turn-off signal when the memory cell is detected to be the defect memory cell;

a row selection line coupled to a second circuit block and adapted to select a row of the memory cell within the memory array, wherein the second circuit block outputs a row turn-off signal when the memory cell is detected to be the defect memory cell;

a switch device coupled to the defect memory cell, a power supply terminal, a sensing amplifier, the column selection line and the row selection line, wherein only when both the column selection line receives the column turn-off signal and the row selection line receives the row turn-off signal, the switch device is turned off so as to disconnect a coupling between the power supply terminal and the defect memory cell, thereby breaking the leakage current path existing in the defect memory cell.

14. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly D. Pham whose telephone number is 571-272-1793. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ly D. Pham  
March 6, 2006



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